Huazheng®

HZ5231
Intelligent DC High Voltage Generator

User Manual

Huazheng Electric Manufacturing (Baoding) Co., Ltd

Dear user:

Thank you for choosing HZ5231 Intelligent DC High Voltage Generator.

We hope that this instrument can make your work easier and more enjoyable, so that you can get the feeling of office automation in the test and analysis work.

Before using the instrument, please read this manual, and operate and maintain the instrument according to the manual to prolong its service life. "Just a light press, the test will be completed automatically" is the operating characteristics of this instrument.

If you are satisfied with this instrument, please tell your colleagues; if you are not satisfied with this instrument, please call (0312) 6775656 to tell you to serve you at all times-Baoding Huazheng Electric Manufacturing Co., Ltd., our company will definitely make you satisfied !

Contents

I. Scope of application

HZ5231 series intelligent DC high-voltage generators are mainly used for DC withstand test or DC leakage current test of zinc oxide arrester, power cable, transformer, circuit breaker, generator and other high-voltage electrical equipment in power departments, industrial and mining enterprises, metallurgy and iron and steel enterprises.

With AIPWM technology, the inaccuracy linearity of PWM technology is adjusted, and the precision of the instrument is greatly improved.Using AI technology set overvoltage protection and overcurrent protection to replace the digital dial switch can only be set voltage value, can't set the current value and voltage drift problems, increased the AI automatic zinc oxide lightning arrester measurement, cable section pressure test, the function of automatic pressure test, and can direct print test report and save the test report, retained the manual way, strengthen the function of arbitrary voltage, power flow to print, and segmented timing function.The instrument added perpetual calendar and time function, experimental report with time and date.

II. Technical features

· Fully automatic MOA test, fully displaying the process of lifting pressure and holding time.

· Automatic cable section withstand test, fully displaying the boost process and holding time.

· Automatic withstand voltage test, complete display of pressure lifting process and holding time.

· AIPWM technology is adopted to adjust the inaccurate linearity of PWM, and the accuracy is greatly improved.Ripple coefficient ≤0.2%.

· With segmented timing and printing functions of arbitrary voltage and current.

· The instrument added perpetual calendar and time functions, and the experimental report included time and date.

III. Main technical performance, specifications and working methods:

1.Voltage output 0-120kV precision ±1%±1 word

2.Current output 0-2000 UA accuracy ±1%±1 word

3.With automatic zinc oxide arrester test, cable section withstand voltage, automatic withstand voltage function

4.It has the function of manually adjusting voltage output.

5.Working mode: Intermittent use: rated load 30 minutes, 1.1 times rated voltage: 10 minutes

6.Working environment: Temperature: -10℃ ~ +40℃

7.Relative humidity: no more than 85% at room temperature of 25℃ (no condensation)

8.Altitude: below 1500 meters

IV. Instructions for use

(1) Panel description

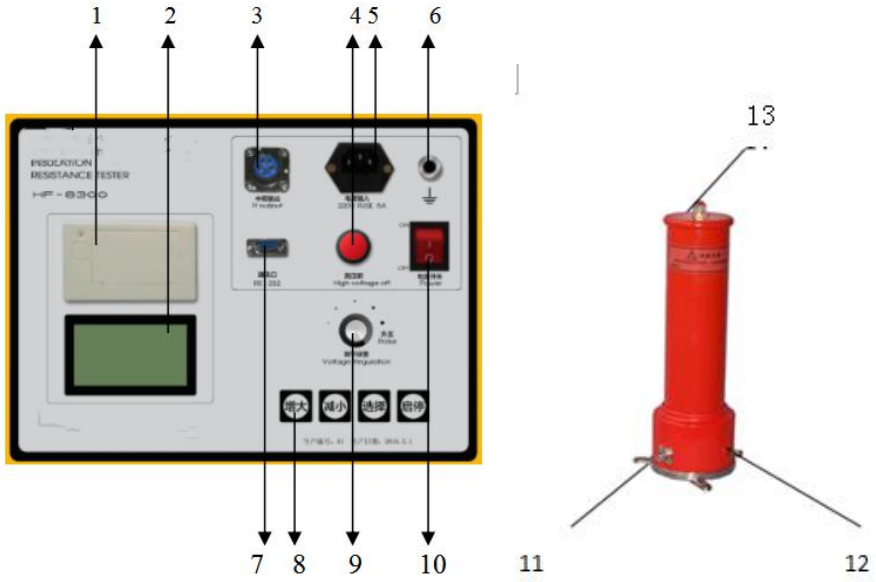


Figure 1 Panel illustration

Printer 2. LCD 3. High voltage output 4. Emergency stop switch 5.A power outlet RS232 interface 8. Touch keyboard 9. Voltage regulating knob 10.The power switch input 12. Ground 13. High voltage output

(2)Operation instructions

Turn on the power switch, and the screen will display the starting screen shown in Figure 3

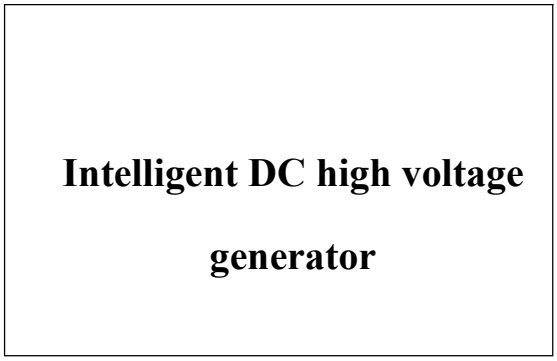


Figure 3 Boot screen

Then the function selection interface in Figure 4 appears

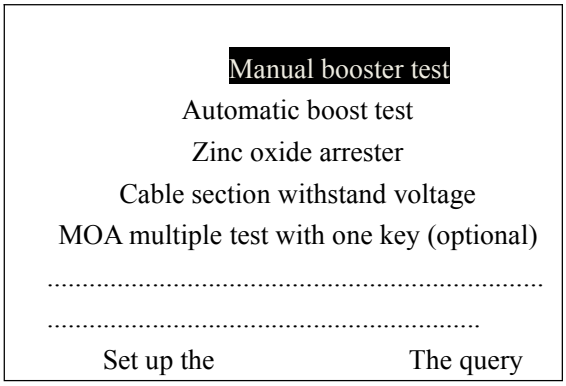


Figure 4 Function selection interface

Press the Function key in this interface to move the cursor to each test item.Then press the "start stop" button to enter the corresponding test item.

Go to Query to see the stored trial record data. A total of 255 records can be stored

Enter "Settings" date time adjustment, you can adjust the date time.

1. Dc high voltage generator test:

Under the function selection interface shown in Figure 4, move the cursor to the DC high-voltage generator and press the start/stop button.

FIG. 5 shows the interface for setting parameters of DC high voltage generator.

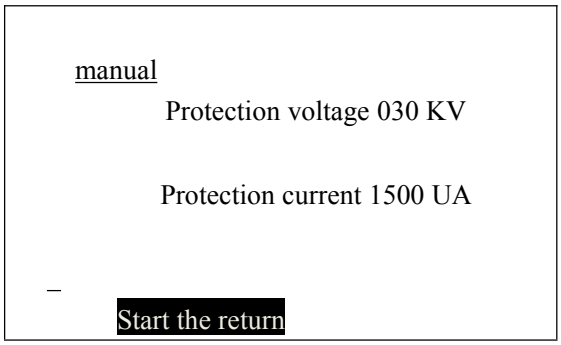


FIG. 5 Parameters setting interface of DC high voltage generator

At this point, press the function key to move the cursor to the corresponding parameter and modify the value by increasing or decreasing the key or by starting and stopping the key.

After modifying the parameters, move the cursor to start the test, and press the start and stop key to enter the test.Figure 6 appears

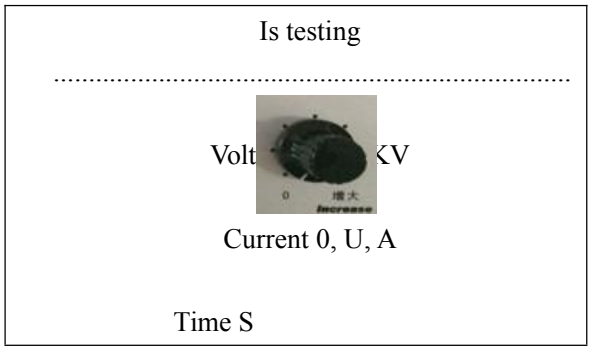


FIG. 6 Booster interface of DC high voltage generator

At this point, gently twist the regulating knob to make the voltage rise slowly, and observe the current.

Figure 7 is the voltage regulating knob

Figure 7.

When the boost is over, press the "start stop" button or the emergency stop switch to close the high-voltage output, and the screen of automatic discharge will be displayed as shown in Figure 8

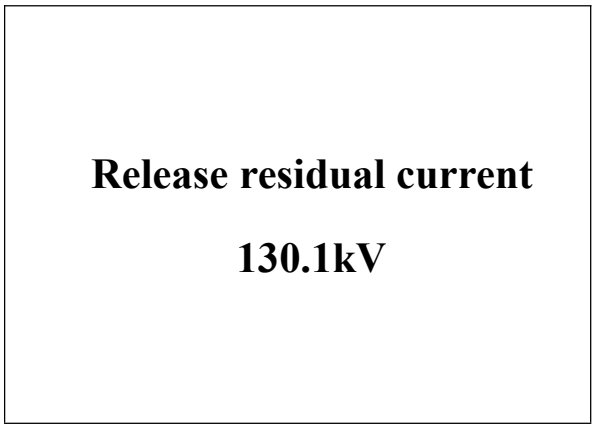


FIG. 8 Automatic discharge screen

If the discharge voltage is very slow, it is recommended to use a discharge rod for manual discharge.When the discharge is completed, the instrument returns to the function selection interface shown in Figure 4.

2. Zinc oxide lightning arrester test:

Under the function selection interface shown in Figure 4, move the cursor to the zinc oxide lightning arrester and press the "Start stop" button.

Figure 9 shows the interface for setting parameters of zinc oxide arrester.

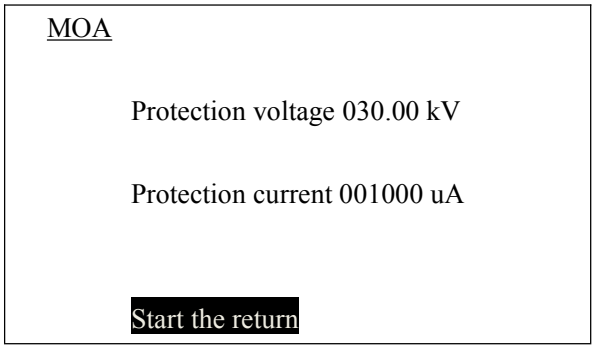


FIG. 9 Interface for setting parameters of zinc oxide arrester

At this point, press the Function key to move the cursor to the corresponding parameter and modify the value by increasing or decreasing or start and stop.

The 10kV lightning arrester protection voltage is 30kV, and the protection current is 1000uA.

After modifying the parameters, move the cursor to start the test, and press the "start stop" key to enter the test.After the test, enter the results interface, which displays Figure 10

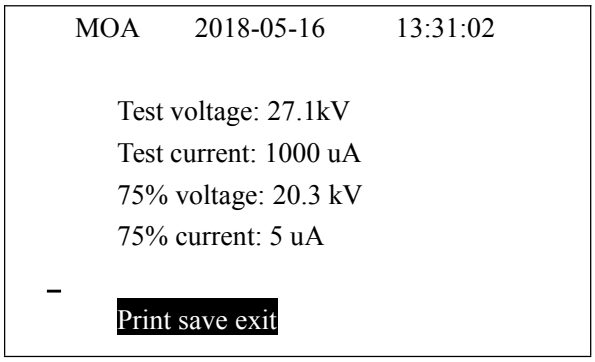


FIG. 10 Interface of results of zinc oxide arrester

The voltage goes up and the current is 0.When the voltage rises to about 25kV, the current starts to increase greatly, but the voltage increases very little.

When the current rises to 1000uA, the boost of the instrument stops. At this point, the timing of 1mA current starts, and the default timing is 5 seconds.Or do it at a set time.

When the clock had finished, the instrument began to buck,

When the voltage drops to 0.751mA, wait 5s.

Then quickly turn off the high pressure. Automatic discharge. Figure 8 shows the automatic discharge screen.

If the discharge voltage is very slow, it is recommended to use a discharge rod for manual discharge. When the discharge is completed, the instrument displays the interface of zinc oxide arrester test results shown in Figure 10.

At this point, press the Select key to "save" to store test results.

Press the Select key to "Print" to print the test results.

At this point, press the select key to "exit" the instrument and return to the functional selection interface shown in Figure 4.

3. Sectional voltage withstand test of cable:

Under the function selection interface in Figure 4, move the cursor to the cable section withstand voltage, and press the start/stop key.

FIG. 14 shows the interface for setting voltage withstand parameters of cable segment.

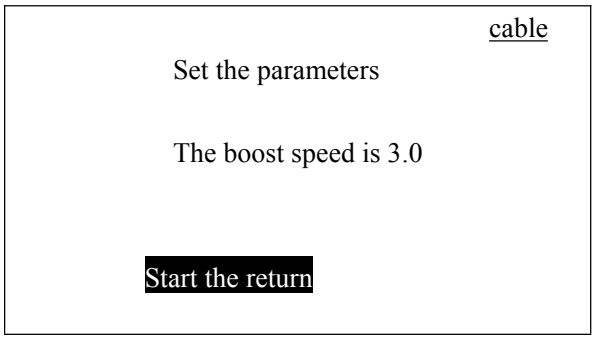


Figure 14

Click "Set Parameters" in Figure 14 to display figure 15 below

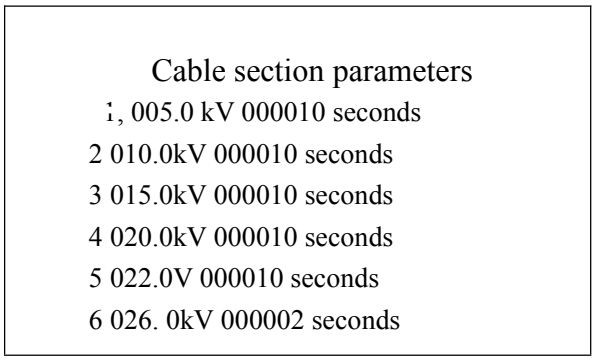


FIG. 15 Interface for setting voltage withstand parameters of cable sections

At this point, press the function key to move the cursor to the corresponding parameter and modify the value by increasing or decreasing the key or by starting and stopping the key.Set the voltage and withstand voltage time, modify the parameters, click "start and stop" to exit the interface shown in Figure 14, move the cursor to "Start" test, and press "Start and stop" to enter the test.Figure 16 appears

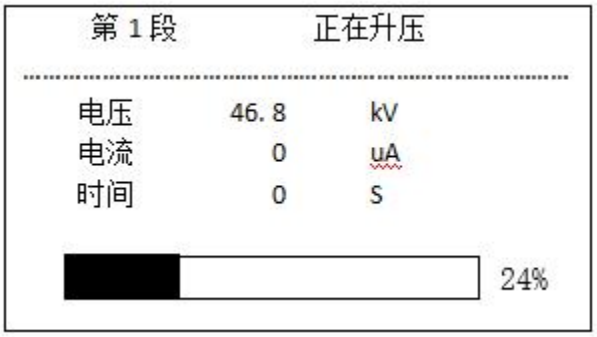


Fig.16 Cable section withstand voltage first section Interface Fig.16 Cable section withstand voltage first section timing

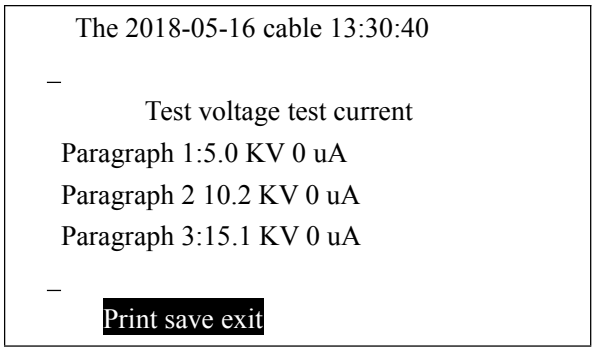
When the voltage rises to the first voltage, start the timer, as shown in Figure 16.

When the timer ends, start the second phase of the boost...

The instrument will turn off the high pressure when the step 6 boost time is completed.Automatic discharge. Figure 8 shows the automatic discharge screen.

If the discharge voltage is very slow, it is recommended to use a discharge rod for manual discharge.

When the discharge is completed, the instrument displays the interface of the cable section withstand voltage test results shown in Figure 17.Press up and down to turn the page



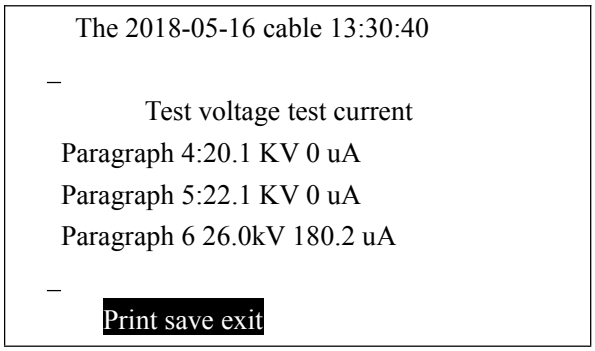


FIG. 17 Interface of cable section withstand voltage test results

At this point, press the Select key to "save" to store test results.

Press the Select key to "Print" to print the test results.

At this point, press the select key to "exit" the instrument and return to the functional selection interface shown in Figure 4

4. Automatic boost test:

Under the function selection interface in Figure 4, move the cursor to the automatic boost test and press the start/stop key.

FIG. 19 Interface for setting parameters of automatic boost test.

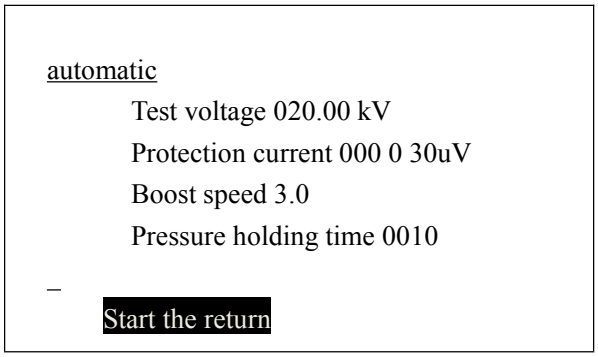


FIG. 19 Interface for setting parameters of automatic voltage withstand test

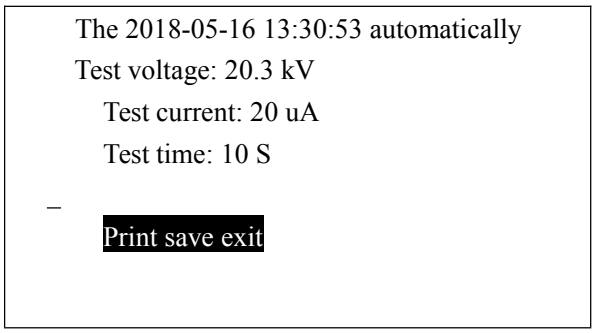
At this point, press the function key to move the cursor to the corresponding parameter and modify the value by increasing or decreasing the key or by starting and stopping the key.

After modifying the parameters, move the cursor to start the test and press the "Start" key to enter the test.Figure 20 appears

FIG. 20 Booster interface of automatic withstand voltage test

When the voltage rises to the set voltage, start the timing, and the instrument will turn off the high voltage when the timing is finished. Automatic discharge. Figure 8 shows the automatic discharge screen.If the discharge voltage is very slow, it is recommended to use a discharge rod for manual discharge.

When the discharge is completed, the instrument displays the interface of the results of the automatic voltage withstand test shown in Figure 21.



At this point, press the Select key to "save" to store test results.

Press the Select key to "Print" to print the test results.

At this point, press the select key to "exit" the instrument and return to the functional selection interface shown in Figure 4

V.The use of discharge rod

1. The special discharge rod shall not contact directly with THE HIGH-voltage DC discharge and shall be kept at a distance. When the corona discharge occurs at the end of the discharge rod and the voltage on the tested product drops by 20% gradually, the discharge rod shall touch the housing of the microammeter and discharge.Finally, the ground wire at the ground end of the discharge rod is directly hung on the test subject.

2. Pay special attention not to discharge the ground wire directly on the high-voltage microammeter housing, so as to avoid the damage of high-voltage microammeter caused by the strong impulse discharge current

VI.Precautions

1.Boost before: to boost the knob "zero", and then press the high voltage through the boost experiment.

2.At the end: buck to "zero" and then disconnect according to the high voltage, do not turn off the power, use the discharge rod to discharge the tested product, after the discharge, turn off the power to end the experiment.

3.Note when discharging, the discharge rod can not discharge (microammeter case), this will burn the microammeter.The discharge rod should discharge on the subject.

4.When conducting capacitive tests, for example, when conducting cable tests, current limiting resistors must be installed at the output end of the voltage doubling cylinder.

5.During the air lift test, the output screw at the top of the double pressure tube should be tightened with the insulation cap, and the micro-ammeter or high-tension wire should not be used for the lift-off test.